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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,747	09/12/2003	Thomas D. Williams	62451.00002	5988

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EXAMINER

AUGUSTINE, NICHOLAS

ART UNIT	PAPER NUMBER
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2179

MAIL DATE	DELIVERY MODE
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10/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,747	Applicant(s) WILLIAMS ET AL.	
	Examiner Nicholas Augustine	Art Unit 2179	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119.

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- A. This action is in response to the following communications: Amendment filed: 08/02/2007. This action is made **Final**.
- B. Claims 7-28 remains pending.
- C. Claims 1-6 canceled. Claims 7-28 are **New**.
-

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 7-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Sorokin et al. (US 6,522,325).

As for independent claim 7, Sorokin teaches a method for allowing users to virtually navigate a space (col.4, lines 32-44), the method comprising: capturing images of the space from a plurality of cameras (col.4, lines 1-8); generating a plurality of synthetic images corresponding to viewpoints along predefined paths

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through the space (col.13, lines 15-67 and col.14, lines 1-30); selectively transmitting sequences of at least some of the synthetic images to the users, wherein the sequence transmitted to each user corresponds to a respective navigation request received from the user (col.13, lines 15-67 and col.14, lines 1-30).

As for dependent claim 8, Sorokin teaches the method for allowing users to virtually navigate a space of claim 7, wherein the sequence transmitted to each user comprises synthetic images corresponding to viewpoints along at least one predefined path that most closely matches the navigation request (col.13, lines 15-67 and col.14, lines 1-30).

As for dependent claim 9, Sorokin teaches the method for allowing users to virtually navigate a space of claim 8, wherein the at least one predefined path comprises at least two predefined paths sharing a common junction (col.18, lines 59-67).

As for dependent claim 10, Sorokin teaches the method for allowing users to virtually navigate a space of claim 7, further comprising the step of defining positions of the paths and viewpoints based at least in part on positions of the cameras (figure 7A).

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As for dependent claim 11, Sorokin teaches the method for allowing users to virtually navigate a space of claim 10, wherein the defining step is performed before the generating and transmitting steps (figure 12).

As for dependent claim 12, Sorokin teaches the method for allowing users to virtually navigate a space of claim 10, wherein the defining step is performed once and the capturing, generating, and transmitting steps are performed repeatedly (figure 5).

As for independent claim 13, Sorokin teaches a method for efficiently providing a visual presence of a scene to a plurality of simultaneous users (col.18, lines 34-46), the method comprising: defining a plurality of paths within the scene, each path terminating at a junction(col.13, lines 15-67 and col.14, lines 1-30).; defining a plurality of viewpoints along each path(col.13, lines 15-67 and col.14, lines 1-30).; capturing images of the scene from a plurality of cameras; generating a synthetic image corresponding to each viewpoint (col.13, lines 15-67 and col.14, lines 1-30).; combining synthetic images corresponding to viewpoints along a path to produce a sequence of images (col.13, lines 15-67 and col.14, lines 1-30).; receiving a navigation request from at least one user of the plurality of simultaneous users (figure 5-6); selecting a path of the plurality of paths based on the navigation request (figure 5-6); displaying a sequence of images corresponding to viewpoints along the selected path to the at least one user

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(figure 5-6).

As for dependent claim 14, Sorokin teaches the method for efficiently delivering a visual presence of claim 13, wherein each sequence of images begins with an image from a viewpoint at a first junction and ends with an image from a viewpoint at a second junction (col.13, lines 15-67 and col.14, lines 1-30; figure 7a).

As for dependent claim 15, Sorokin teaches the method for efficiently delivering a visual presence of claim 13, further comprising queuing a second navigation request received from the at least one user while a sequence of images is being displayed to the at least one user (col.18, lines 34-46).

As for dependent claim 16, Sorokin teaches the method for efficiently delivering a visual presence of claim 13, wherein the plurality of cameras comprises pairs of cameras with at least partially overlapping views and substantially similar viewing angles (figure 7a).

As for dependent claim 17, Sorokin teaches the method for efficiently delivering a visual presence of claim 13, wherein the plurality of cameras comprises cameras arranged substantially parallel to the paths (figure 3).

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As for dependent claim 18, Sorokin the method for efficiently delivering a visual presence of claim 13, wherein clusters of at least some of the plurality of cameras are located near junctions (col.7, lines 31-40).

As for dependent claim 19, Sorokin the method for efficiently delivering a visual presence of claim 13, wherein the plurality of simultaneous users comprises at least one thousand users (col.18, lines 46-56).

As for independent claim 20, Sorokin a system for efficiently providing a virtual presence within a scene to a plurality of users, the system comprising: a plurality of cameras comprising pairs of cameras, each pair configured to capture at least partially overlapping views of at least a portion of the scene at similar viewing angles; at least one image processor configured to generate synthetic images corresponding to viewpoints along predefined paths within the scene and combine the images into sequences of images; at least one router configured to select sequences in response to navigation requests; at least one user processor configured to compose a video stream for each user comprising at least one sequence selected by the router; a plurality of user devices, each coupled to at least one user processor via a data network and configured to display a respective video stream (note the analysis of claims 7 and 13 above).

As for dependent claim 21, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein each sequence of images comprises synthetic

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images corresponding to the viewpoints along a path (col.13, lines 15-67 and col.14, lines 1-30).

As for dependent claim 22, Sorokin the system for efficiently providing a virtual presence of claim 21, wherein at least some of the sequences of images comprise synthetic images corresponding to the viewpoints along two or more paths sharing at least one common junction (col.13, lines 15-67 and col.14, lines 1-30; col. 7, lines 31-39).

As for dependent claim 23, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein the router is further configured to select a sequence comprising images from viewpoints along a path, wherein the path best matches a navigation request (figure 5-6).

As for dependent claim 24, Sorokin the system for efficiently providing a virtual presence of claim 20, further comprising a load balancer configured to balance users among the at least one user processor (col.18, lines 34-56).

As for dependent claim 25, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein the user devices are further configured to transmit navigation requests (col.18, lines 34-56).

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As for dependent claim 26, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein at least one of the user devices is a personal computer (col.4, line 5).

As for dependent claim 27, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein the data network is the Internet (col.4, lines 9-19).

As for dependent claim 28, Sorokin the system for efficiently providing a virtual presence of claim 20, wherein the system is configured to provide a virtual presence to more than one thousand simultaneous users (col.18, lines 34-56).

(Note:) It is noted that any citation to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006,1009, 158 USPQ 275, 277 (CCPA 1968)).

Response to Arguments

Applicant's arguments filed 08/02/2007 have been fully considered but they are not persuasive.

A1. Applicant argues Sorokin does not teach or suggest "generating a plurality of synthetic images corresponding to viewpoints along predefined paths through the space and selectively transmitting sequences of at least some of the

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synthetic images to the users, wherein the sequence transmitted to each user corresponds to a respective navigation request received from the user”.

R1. Examiner does fully agree. Sorokin does not specifically mention the exact term language of the immediate application, but Sorokin does teach the same identical functionality of the immediate application and achieves the same tangible results of the immediate application. Sorokin uses a plurality of real cameras set up in a predetermined path of navigation in a real world environment to capture a view of interest for a user (figure 7a, col.4, lines 1-8; Sorokin) which is what is explained by the Applicant (spec: page 11, par.4 and figure 2). The Applicant then explains and defines the definition of synthetic viewpoints on page 11-12 of specification along with other areas. Sorokin also explains the use of “synthetic viewpoints” but uses different terminology which when defined discloses the same functionality of the Applicants definition. Sorokin explains of two times of creating “synthetic viewpoints”: mosaicing and tweening (col.13-14) wherein camera A takes a picture with an angle of view; camera B takes a picture with an angle of view; the techniques either mosaicing or tweening takes the two pictures from camera A and B and creates a synthetic image or (viewpoint) by doing this and adding it to the path of navigation the user is presented with a presentation that is seamless between real viewpoints and synthetic viewpoints. Applicant is invited to look at U.S. Pat. No. 5,649,032 and 5,259,040 as relied upon by Sorokin for information purposes for those not skilled in the art of mosaicing or tweening techniques. Also note the definition of synthetic as well (<http://www.hyperdictionary.com/search.aspx?define=synthetic>).

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Sorokin also discloses that any combination of amount of camera can be used and any setup can be used with out departing from the scope of the invention (col.7, lines 31-39). Sorokin also explains that a plurality of remote terminal user to simultaneously navigation through the array independently of each other (col.18, lines 31-56).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art is related to virtual space navigation.

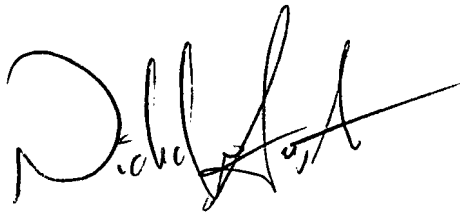
Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Augustine whose telephone number is 571-270-1056. The examiner can normally be reached on Monday - Friday: 7:30- 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

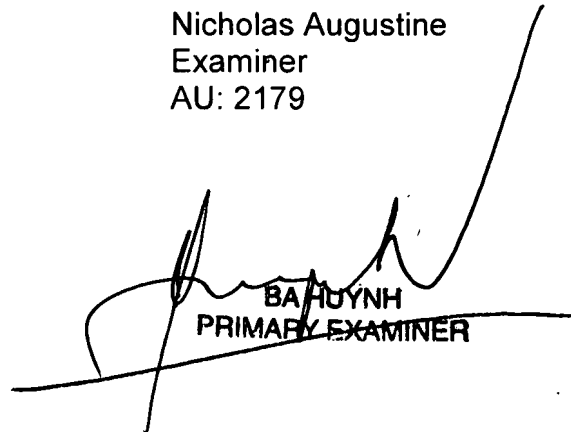
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



N. Augustine
10/12/2007

Nicholas Augustine
Examiner
AU: 2179



BA HUYNH
PRIMARY EXAMINER